

Gypsy Moth

in Indiana

Q&A



Q&A's About Using *Btk* to Control Gypsy Moth

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What is the gypsy moth, and why is it a problem?

The gypsy moth is an insect with a big appetite for oaks. Each caterpillar can grow up to 2 inches long and can consume up to 11 square feet of foliage from early May until June. When abundant, caterpillars can completely defoliate trees. Although healthy trees can survive defoliation, repeated removal of leaves can kill a tree. Older, less vigorous trees suffering from drought can be killed by a single defoliation. Capable of feeding on 500 different kinds of plants, this pest threatens Indiana forests and suburban landscapes.

Gypsy moth caterpillars are also a public nuisance in recreational and residential areas that are known for their oaks. The rain of caterpillars and their excrement from treetops can discourage even the heartiest Hoosiers from taking a walk in the park. Some people develop rashes or allergies to caterpillar hairs that float through the air.

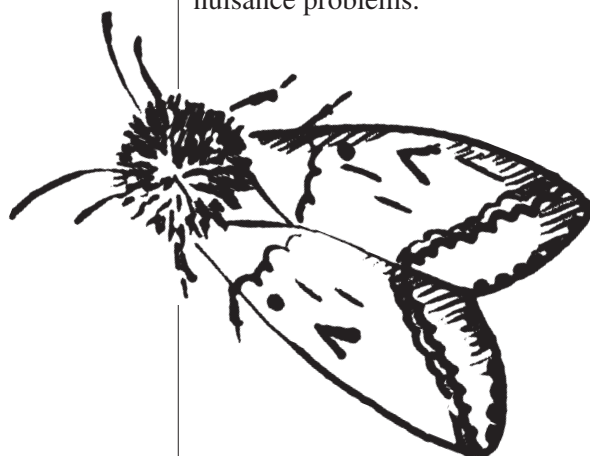
What is *Btk*, and how does it kill the gypsy moth?

Btk (*Bacillus thuringiensis* var. *kurstaki*) is a bacterium found naturally on leaves and in soil. These bacteria act as tiny factories that produce protein crystals that kill specific groups of insects.

When eaten, the protein crystals tear the cells that line intestines of susceptible insects, causing lethal bacterial infections. The source of infection can be the *Btk* itself or any of a number of species of bacteria already present in the insect's gut. Death occurs within a few hours to a few weeks after the insect ingests *Btk*.

How is *Btk* insecticide used to kill gypsy moth?

In Indiana, most *Btk* applications are applied from aircraft or spray trucks to areas where gypsy moths threaten trees. A series of two sprays is applied in early May, when caterpillars are small and most susceptible to *Btk*. Sprays outside of generally infested areas are applied to eliminate isolated populations of moths, thereby slowing the spread of gypsy moth throughout the state. In counties where gypsy moth is already established, *Btk* sprays are used to prevent or reduce defoliation and nuisance problems.



Is *Btk* insecticide similar to *Bt* corn?

The same species of bacteria is used to produce *Btk* insecticide and *Bt* corn. With *Bt* corn, the corn plant itself is genetically programmed to produce *Bt* protein crystals on its own. Susceptible insects feeding on either *Bt* corn plants or *Btk* insecticide sprayed on leaves die from bacterial infection after the protein crystal tears the intestinal lining. *Btk*-producing plants are considered safe for human consumption.

Is *Btk* insecticide sprayed on any food crops?

Yes. *Btk* is widely and safely used on many edible crops, including fruits and vegetables. In fact, *Btk* can be applied on food crops the day they are harvested.

Is *Btk* insecticide dangerous?

Btk has been safely used to kill gypsy moth in the northeastern United States since 1980. *Btk* does not cause disease in people, mammals, birds, or fish. *Btk* has been reported to cause minor and temporary irritation to exposed skin, eyes, ears, noses, or throats in a small number of individuals. However, numerous studies of large communities of people exposed to *Btk* during aerial sprays have repeatedly failed to find any significant adverse risks to the health of the general public.

What precautions should I take when *Btk* is sprayed in my area?

Staying indoors during sprays is a good way to minimize exposure to *Btk*. Plan on remaining indoors for at least 10 minutes after airplanes have finished spraying. Wait until spray or dew has completely dried before allowing children to play outside. If for some reason you come in contact with *Btk* spray, wash the affected area with soap and water.

Will *Btk* sprays kill butterflies?

Yes, but they will not eliminate them. *Btk* only kills butterflies and moths that are in the caterpillar stage at the time of spraying. Most of Indiana's butterflies, including Monarch butterflies, are not in the caterpillar stage until over a month after gypsy moth sprays are completed. This allows plenty of time for the *Btk* protein to break down and vanish. Furthermore, only small parts of the forest are targeted for spray. Butterflies outside the spray area are not affected and will quickly re-populate sprayed areas.

Honeybees, ladybugs, and most beneficial insects are not affected by *Btk*.

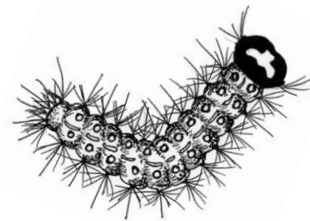
Will *Btk* damage the paint on my car?

No. Some people living in spray areas have reported finding a fine dust on their cars after spraying, but this easily washes off and does not harm the finish.



For More Information on Gypsy Moths

- Visit Purdue Extension Entomology's Gypsy Moth Information Web site <http://www.entm.purdue.edu/g_moth/> to download free GM series bulletins and to get the latest information.
- Contact the Exotic Insects Education Program at the Department of Entomology, Purdue University, W. Lafayette, IN, 47907-1158; (765) 494-0822.
- To report gypsy moth in your area, call the Indiana Department of Natural Resources toll-free hotline at 1-866-NO-EXOTIC (1-866-663-9684).
- Visit <www.invasivespecies.in.gov>.
- Contact your county's Extension office. (Call 1-888-EXT-INFO for your county office's phone number.)



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